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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,900	12/21/2001	Thomas Ronald Taylor	87355.3060	5307

7590 05/21/2004

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EXAMINER

NGUYEN, SANG H

ART UNIT PAPER NUMBER

2877

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/023,900

Applicant(s)

TAYLOR ET AL. 

Examiner

sang nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "**a flexible arm**" in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Danna et al (U.S. Patent No. 5,278,642) in view of Sakamoto et al (U.S. Patent No. 5,096,292).

Regarding claims 1, 3, and 6; Danna et al discloses a borescope apparatus for inspection of heat exchanger tubes or turbine engine comprising:

- a flexible viewing scope considered to be a viewing head/probe tip (12 of figure 1) connected to a first end of a fiber optic cable (35 of figure 2 and col. 3 lines 65-68) by a flexible insertion tube (11 of figure 1), wherein the fiber optic cable (35 of figure 2) of the flexible insertion tube (11 of figure 1) is encased in a flexible arm considered to a control unit (13 of figure 1); and
- a light source (col.1 lines 37-40 and col.3 lines 42-43) for providing uv light at a second end of the fiber optic cable (35 of figure 1) to the probe tip/viewing head (12 of figure 1). See figures 1-4.

Danna et al discloses all of features of claimed invention except for an eyepiece can be focused, wherein the eyepiece having an eyepiece lens connected to the second end of the fiber optic cable. However, Sakamoto et al teaches that it is known in the art to provide an eyepiece portion (162 of figure 26) having an eyepiece lens system (164 of figure 26) can be focused, wherein the eyepiece portion (162 of figure 26) of the borescope (1 of figures 1 and 26) connected to a second end of the fiber optic cable of flexible elongate insertion (3 of figure 1). See figures 1-2, 7-8, 11-12, 18, 20, 24-26, and 28-31.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify a borescope apparatus of Danna et al with an eyepiece having an eyepiece lens connected to a second end of the fiber optic cable

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as taught by Sakamoto et al for the purpose of inspecting image signal of the object and reducing and focusing light beam by eyepiece lens.

Regarding claim 2; Danna et al teaches that a white light source (col.1 lines 38-40) provide at the second end of the optical fiber cable (35 of figure 2).

Regarding claim 5; Danna et al teaches ultraviolet or white light source (col.1 lines 37-40) is a blue LED.

Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Danna et al in view of Sakamoto et al as applied to claims 1-3 and 5-6 above, and further in view of Tomasch (U.S. Patent No. 5,115,136).

Regarding claim 4; Danna et al in view of Sakamoto et al teaches all of features of claimed invention except for a switch for tuning the ultraviolet light source on and off. However, Tomasch teaches that it is known in the art to provide an operator can switch UV light source (4 of figure 1 and col.3 lines 59-62). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the borescope of Danna et al in view of Sakamoto et al with a switch for tuning the ultraviolet light source on and off as taught Tomasch for the purpose of controlling transmitting uv light to the object.

Claims 8-11 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomasch (U.S. Patent No. 5,115,136) in view of Sakamoto et al (U.S. Patent No. 5,096,292).

Regarding claims 8 and 15; Tomasch discloses an ultraviolet visual inspection system having a fiberscope (1 of figure 1) comprising:

* an ultraviolet light source means for (4 of figure 1) illuminating an object (16 of figure 1) with an ultraviolet light;

- a fiberscope (1 of figures 1 and 2 and col.3 lines 12-15) means for viewing the object (16 of figure 1) through an eyepiece (5 of figure 1) with a flexible viewing scope considered to be an articulated probe (col.2 lines 30-32) through a fiber optic cable (13, 14 of figure 3 and col.3 lines 28-34) connected at a first end to the flexible viewing scope (col.2 lines 30-32) and a second end to the eyepiece (5 of figures 1-2). See figures 1-3.

Tomasch discloses all of features of claimed invention except for an eyepiece having an eyepiece lens. However, Sakamoto et al teaches that it is known in the art to provide an eyepiece portion (162 of figure 26) having an eyepiece lens system (164 of figure 26), wherein the eyepiece portion (162 of figure 26) of the borescope (1 of figures 1 and 26) connected to a second end of the fiber optic cable of flexible elongate insertion (3 of figure 1). See figures 1-2, 7-8, 11-12, 18, 20, 24-26, and 28-31.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify an ultraviolet visual inspection system having a fiber of Tomasch with an eyepiece having an eyepiece lens as taught by Sakamoto et al for the purpose of inspecting image signal of the object and reducing light beam by eyepiece lens.

Regarding claims 9 and 16; Tomasch teaches all of features of claimed invention except for the fiber optic cable is encased in a flexible housing. However, Sakamoto et al teaches that the fiber optic cable (3 of figure 1) is encased in a flexible housing (2 of

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figures 1-2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify an ultraviolet visual inspection system having a fiber of Tomasch with the fiber optic cable is encased in a flexible housing as taught by Sakamoto et al for the purpose of transmitting and reflecting through fiber to and from the object.

Regarding claims 10 and 17; Tomasch discloses illuminating the object (16 of figure 1) by a white light (40 of figure 1).

Regarding claims 11 and 18; Tomasch discloses adjusting the focus of the eyepiece by an adjustment ring (7 of figure 2).

Claims 12-14 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomasch in view of Sakamoto et al as applied to claims 8-11 and 15-18 above, and further in view of Danna et al (U.S. Patent No. 5,278,642).

Regarding claims 12 and 19; Tomasch in view of Sakamoto et al teaches all of features in claimed invention except for ultraviolet light is generated by a blue LED. However, Danna et al shows that ultraviolet light is generated by a blue LED (col.1 lines 27-30 and col.3 lines 32-34). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify an ultraviolet visual inspection system having a fiber of Tomasch in view of Sakamoto et al with ultraviolet light is generated by a blue LED as taught by Sakamoto et al for the purpose of transmitting sequential primary color light to object.

Regarding claims 13 and 20; Tomasch teaches all of features of claimed

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invention except for the fiber optic cable is encased in a flexible housing. However, Sakamoto et al teaches that the fiber optic cable (3 of figure 1) is encased in a flexible housing (2 of figures 1-2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify an ultraviolet visual inspection system having a fiber of Tomasch with the fiber optic cable is encased in a flexible housing as taught by Sakamoto et al for the purpose of transmitting and reflecting through fiber to and from the object.

Regarding claim 14; Tomasch discloses illuminating the object (16 of figure 1) by a white light (40 of figure 1).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Morito et al (5986752) discloses borescope; Tagami (5170775) teaches endoscope; Berry, Jr. (4825259) discloses adapter tip for remote measuring device; Oxford et al (4822154) discloses improvement in or relating to borescopes; Cohen et al (4686963) teaches torsion resistant vertebrated probe of simple construction; Kanto (4330169) discloses device and method for aiding vision; Mackenzie et al (4298312) discloses damaged vane location method and apparatus; or Howell et al (3778170) discloses borescope guide tube.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Nguyen whose telephone number is (571) 272-2425. The examiner can normally be reached on 9:30 am to 7:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SN

Sang Nguyen/SN

May 10, 2004



Frank G. Font
Supervisory Patent Examiner
Art Unit 2877
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